

Process Description: Cork Production

Cork is a material harvested from the bark of Cork Oak Trees, which are found mainly in countries along the Mediterranean Sea – over half of the world’s cork comes from Portugal. The ultra-thick double-layered bark developed to protect the tree against the elements of the area and thus the trees are able to thrive despite the arid climate, dry soil, and forest fires [1]. This thick bark layer is removed from the tree and manufactured into various cork items for public consumption. Bottle stoppers are the most common use for cork, but it has other applications as well.

The steps required to harvest cork and produce it for mass consumption include (1) bark removal, (2) bark preparation, and (3) cork cutting.

Bark Removal

The removal of cork oak bark is a delicate task that is completed by hand. Skilled cork farmers use long-handled hatchets to cut sections of the bark (see figure 1) which are then pried away from the tree. Farmers must be careful not to damage the tree underneath the bark so as not to cause regrowth complications or tree death [1].



Figure 1: Cork Oak bark removal [2]

Bark Preparation

Cork Oak Tree bark must undergo special preparations before the process of creating bottle stoppers can begin. The bark must be (1) stabilized, (2) cleaned, and (3) graded.

Stabilizing. After the bark has been successfully removed from the tree, the resulting planks are set out to stabilize for up to six months (see figure 2). During this time the planks are able to flatten and expand, allowing more material to be garnered from them [2;4].



Figure 2: Cork Oak bark stabilization [3]

Cleaning. After stabilization, the bark is boiled in order to soften and clean it (see figure 3). It is dipped in boiling water for an hour to clean off any remaining particles or potential contaminants [2;3]. Once cleaned, the outer bark layer is removed and the bare planks are left out to dry for several more weeks.

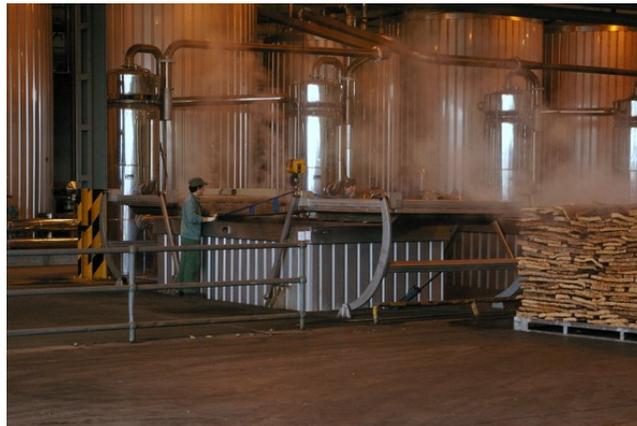


Figure 3: Cork plank cleaning [3]

Grading. The planks are graded by eye to determine their quality and thus what sort of end product they will be used to make, including high-grade corks, technical or agglomerate corks, or other items manufactured from cork scrap, such as flooring or wall tiles.

Cork Cutting

Once the bare cork planks have been prepared and sorted, they are ready to be cut into solid bottle stoppers, called traditional corks, or turned into technical corks.

Traditional corks. For traditional bottle stoppers the bare planks are cut into strips of the desired width of the corks. High-grade bottle stoppers are hand-punched from the slab by factory workers (see figure 4) and lesser grade bottle stoppers are punched by a machine using hollow tubes [3]. After being punched, corks are sterilized and stamped with labels of various wine companies.



Figure 4: Hand-punching bottle stoppers [3]

Technical corks. Technical corks are made up of discs of natural cork glued to the end of agglomerate corks (see figures 5 and 6). Agglomerate corks are made up of waste cork that is ground up, steamed, mixed with glue, formed into rods, and chopped to size [5]. Technical corks are cheaper to produce and make use of scrap cork that would otherwise go to waste.



Figure 5: Natural cork discs [5]



Figure 6: Agglomerate cork rods [5]

References

1. “Cork,” Jelinek Cork Group, last modified 2020, <https://www.jelink.com/cork/>
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3. “How cork is made,” Wineanorak Global Wine Journal, last modified July 12, 2018, <https://www.wineanorak.com/corks/howcorkismade.htm/>
4. “How Are Wine Corks Made?,” Tanglewood, last modified June 22, 2018, <https://www.tanglewood.co.uk/blogs/news/how-wine-corks-made/>
5. “How cork is made, part 2,” Wineanorak Global Wine Journal, last modified July 12, 2018, <https://www.wineanorak.com/corks/makingtechnicalcorks.htm/>